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Taxonomic studies of *Helminthosporium* from China 5. Two new species from Hunan and Sichuan Province*

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Abstract — Two new species of the genus *Helminthosporium* are reported from China: *H. bambusicola* and *H. hunanense*. Type specimens are deposited in the Herbarium of Henan Agricultural University: Fungi (HHAUF).

Key words — systematics, hyphomycetes, saprobes

In the course of a survey of *Helminthosporium* species in China, our previous research revealed eleven new species and five new records from China (Zhang et al. 2003, 2004, 2007, 2009). In this paper we describe two new species of this genus. Specimens studied are deposited in the Herbarium of Henan Agricultural University: Fungi (HHAUF).

Helminthosporium bambusicola Meng Zhang, H.Y. Wu & Zhen Y. Wang, **sp. nov.**

MycoBank MB 516715 Fig. 1

In substrato naturali coloniae effusae, atrae, pilosae. Mycelium plerumque immersum. Stromata partim superficialia et, partim immersa, atrobrunnea, pseudoparenchymatica, 10 µm alta, 25 µm lata. Conidiophora singularia spice lateribusque hypharum vel fasciculata ex stromata quoque, oriunda, simplicia, cylindrica, recta vel flexuosa, septata, levia, brunnea, interdum apicem versus pallidiora, 55–247 µm longa, 4–6 µm crassa, poris conidiiferis ad apicem et infra 1–2 septa supera praedita. Conidia obclavata, recta vel flexuosa, levia, pallide brunnea, 5–8-distoseptata, 36–66 µm longa, 6–11 µm crassa, apicem versus ad 2.0–4.5 µm gradatim attenuata.

Holotype: On dead *Bambusa* sp. culm, Sichuan, China, 16. VIII 2008, coll. Z.Y. Wang, HHAUF $_{08}$ 0266.

Etymology: Named for the substrate.

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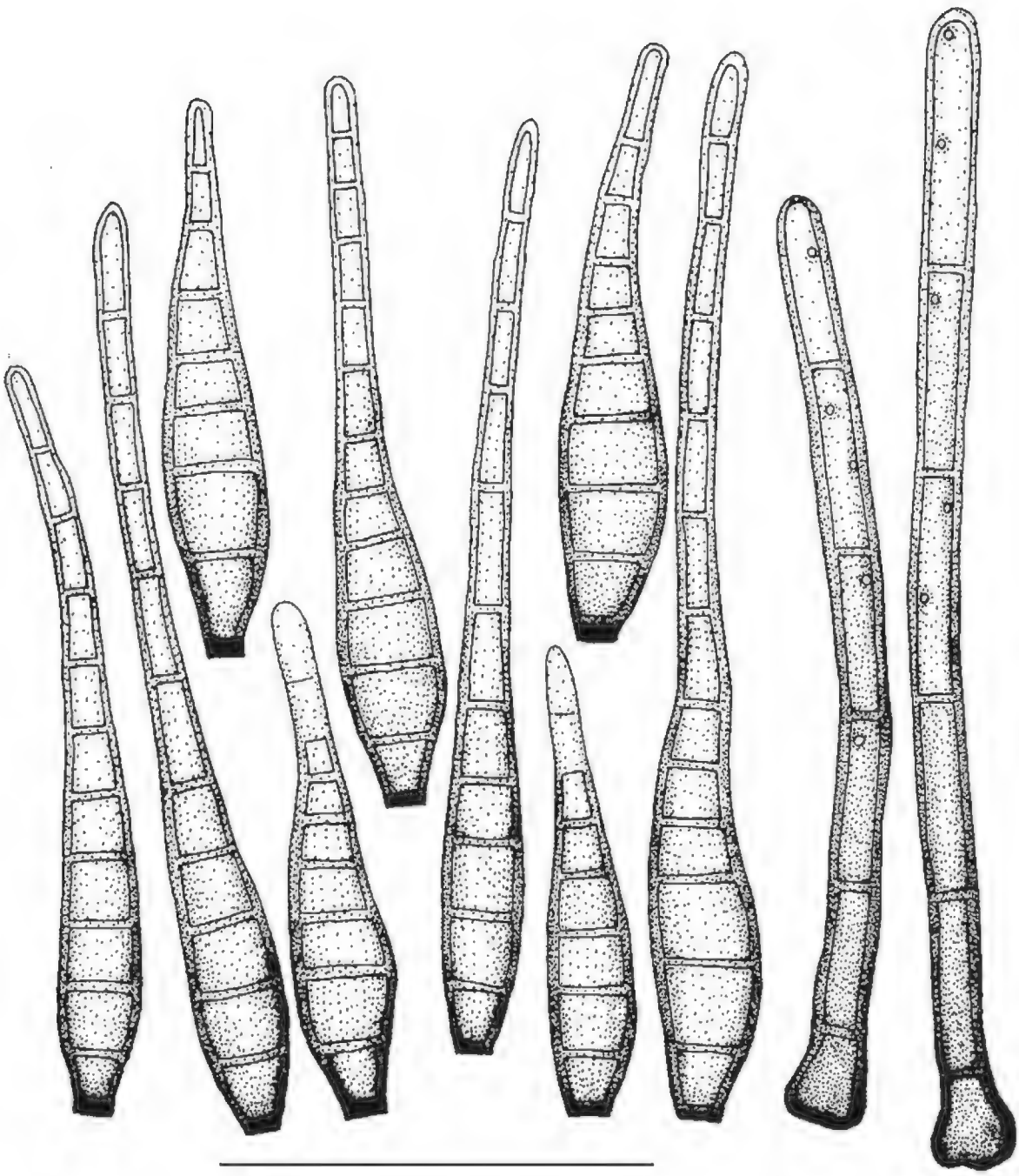

FIG. 1 *Helminthosporium bambusicola* (ex holotype, bar = 50 μm)
Conidia and conidiophores on natural substratum

Colony effused, black, hairy in the substrata. Mycelium mostly immersed in the substrata. Stromata partly superficial, partly immersed in the substrata, dark brown, pseudoparenchymatous, up to 10 μm tall, 25 μm wide. Conidiophores arising in fascicles from the upper cells of the stromata or solitary from the swelled cell of the mycelium, simple, cylindrical, straight or flexuous, thick-walled, smooth, brown, paler towards the apex, 55–247 μm long, 4–6 μm wide, with well-defined small pores (conidiogenous loci) at the apex and laterally just beneath the upper 1–2 septa. Conidia straight or slightly flexuous, obclavate, thin-walled 1–1.5 μm thick, smooth, pale brown, paler towards the apex, 5–8-

distoseptate, 36–66 µm long, 6–11 µm wide, narrowing towards the apex to 2–4.5 µm wide, scar not distinct at the base.

Comments: Cooke (1892) published *Helminthosporium bambusae* on *Bambusa spinosa* Roxb. ex Buch.-Ham., a species distinguished by fewer distosepta (3–5) and slightly larger (60–70 µm long, 12 µm wide) conidia with slightly thinner (≤1.5 µm) walls. Although the two species inhabit identical substrates, we feel that the morphological differences, while minor, support naming a new species. The new taxon also resembles *H. solani* Durieu & Mont. (Ellis 1961) in its conidial shape and size. However, *H. solani* is a pathogen on solanaceous hosts, has larger conidiophores (120–600 µm long, 9–15 µm wide at the base, 6–9 µm wide at the apex), and slightly thicker (≥ 2 µm) conidial walls.

Helminthosporium hunanense Meng Zhang, H.Y. Wu & Zhen Y. Wang, **sp. nov.**

MycoBank MB 516716 Fig. 2

In substrato naturali coloniae effusae, atrae, pilosae. Mycelium plerumque immersum. Stromata nulla. Conidiophora singularia vel 2–3 fasciculata ex spice lateribusque hypharum oriunda, recta vel flexuosa, cylindrica, septata, levia, brunnea vel atrobrunnea, interdum apicem versus pallidiora, 70–226 µm longa, 5–7 µm crassa, poris conidiiferis ad apicem et infra 1–3 septa supera praedita. Conidia obclavata, recta vel curvata, levia, moderate brunnea, apicem versus pallidiora, 4–12-distoseptata, 56–127 µm longa, 10–14 µm crassa, apicem versus ad 2–4 µm gradatim attenuata, basi cicatrice majuscula fusca praedita.

Holotype: On dead branches of an unidentified tree, Zhangjiajie, Hunan , China, 2 IX 2009, coll. M. Zhang, HHAUF $_{09}$ 0451.

Etymology: Named for the collection locality (province).

Colony effused, black, hairy in the substrata. Mycelium mostly immersed in the substratum. Stromata absent. Conidiophores arising solitary or in fascicles from the cells of the mycelium, simple, straight or flexuous, septa at 17–31 µm intervals, thick-walled, cylindrical, smooth, brown, 70–226 µm long, 5–7 µm wide just above the base cell which 8.5–14 µm wide, with well-defined small pores at the apex and laterally beneath the upper 1–3 septa. Conidia obclavate, straight or curved, thin-walled, 1–1.5 µm thick, smooth, middle brown, paler towards the apex, 4–12-distoseptate, 56–127 µm long, 10–14 µm wide in the widest part, narrowing towards the apex to 2–4 µm wide, with a blackish-brown scar at the base, 1.5 µm thick.

Comments: The new species is most closely related to *Helminthosporium dalbergiae* M.B. Ellis in conidial morphology (shape and size). *H. dalbergiae* differs from this fungus by its much larger (300–550 µm long, 10–12 µm wide) conidiophores that arise from stromata and thicker (≥ 2µm) conidial walls.

The thinner conidial wall may be helpful in distinguishing both *H. hunanense* and *H. bambusicola* from other *Helminthosporium* species.

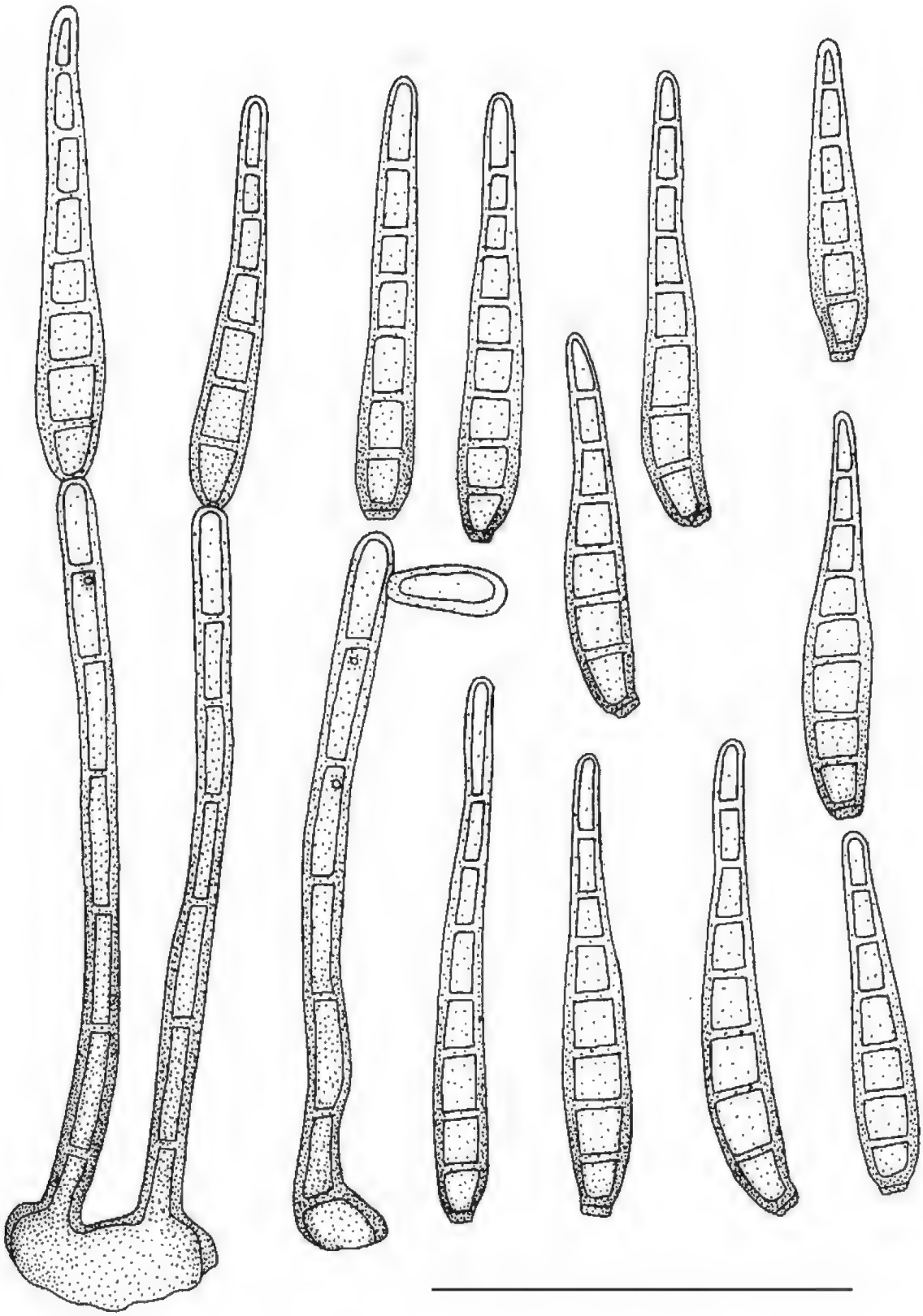

FIG. 2 *Helminthosporium hunanense* (ex holotype, bar = 50 μm)
Conidia and conidiophores on natural substratum

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